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SEMICONDUCTIVE ROTATION SENSOR

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ABSTRACT

PURPOSE: To enhance sensitivity, by providing a slit to the central part of the beam in the vicinity of a cantilevered beam and forming piezoelectric resistor elements to both sides of the slit in parallel to the longitudinal direction of the cantilevered beam.

CONSTITUTION: When the signal with resonant frequency of a cantilevered beam 1 is applied to a semiconductive rotation sensor from an oscillator 7 through an electrode 4, the free end 2 of the cantilevered beam 1 vibrates at the resonant frequency. When the cantilevered beam 1 is rotated around a rotary axis to the direction shown by the arrow in this state, Coriolis' force shown by the arrow 10 is applied. This force is added to one side of a slit 6 as compression stress and added to the other side thereof as tensile stress. Because the slit 6 is provided to the central part of the cantilevered beam 1 and a piezoelectric resistor element is formed in parallel to the longitudinal direction of the cantilevered beam 1, deformation stress can be concentrated to the piezoelectric resistor element and the stress of a largely deformable part can be detected and, therefore, sensitivity can be enhanced.